

What is claimed is:

SUB A2 1. A composition for enhancing delivery of a molecule to the nucleus of a eukaryotic cells comprising a nuclear targeting peptide containing a nonclassical, nuclear
5 localization signal.

2. The composition of claim 1 wherein the nuclear targeting peptide interacts with transportin to mediate nuclear pore targeting and import of molecules into the nucleus of the cells.

10 3. The composition of claim 2 wherein the nuclear targeting peptide comprises SEQ ID NO: 3.

SUB Ba 4. A method of delivering selected molecules to nuclei of eukaryotic cells comprising contacting the eukaryotic cells with the selected molecules and a nuclear targeting peptide
15 containing a nonclassical, nuclear localization signal.

5. The method of claim 4 wherein the nuclear targeting peptide interacts with transportin to mediate nuclear pore targeting and import of the selected molecules into the nucleus of the cells.

20 6. The method of claim 5 wherein the nuclear targeting peptide comprises SEQ ID NO:3.

SUB A3 7. A compound comprising:
(a) a cationic peptide scaffold; and
(b) a nuclear targeting peptide containing a
25 nonclassical, nuclear localization sequence,

said cationic peptide scaffold being conjugated to said nuclear targeting peptide via a hydrolytic-resistant chemical linkage.

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8. The compound of claim 7 wherein the nuclear targeting peptide comprises SEQ ID NO:1.

9. A composition comprising a peptide scaffold, a nuclear targeting peptide containing a nonclassical nuclear localization sequence and a plasmid containing a selected nucleic acid sequence.

10. The composition of claim 9 wherein the peptide scaffold is conjugated to the nuclear targeting peptide and a complex is formed between the plasmid and the conjugate.

11. A method for expressing a selected nucleic acid sequence in eukaryotic cells comprising contacting cells with a mixture of a selected nucleic acid sequence, a peptide scaffold and a nuclear targeting peptide containing a nonclassical nuclear localization signal.

12. A method for expressing a selected nucleic acid sequence in eukaryotic cells comprising forming a complex between a plasmid containing the selected nucleic acid sequence and a scaffold-nuclear targeting peptide conjugate; and contacting cells with the complex.

13. Eukaryotic cells transfected with a complex comprising a plasmid containing a selected nucleic acid sequence and a scaffold-nuclear targeting peptide conjugate.

14. A method for treating a patient suffering from a condition associated with an absence in the expression of a normal selected nucleic acid sequence comprising administering to the patient the composition of claim 9.